3 **ABSTRACT**

4 An application development platform enables applications to be

5 created easily for, e.g., mobile devices that have short-range

6 wireless communication capability. The development platform

7 exposes a carefully chosen core set of services through an API.

8 Each of the applications can broadcast its services to local and

9 remote devices. Message delivery between devices is guaranteed

10 even for messages that cannot be delivered directly by local short-

11 range wireless transmission. Message delivery through other

12 channels, including the Internet, can occur transparently to the

13 user. Each device can be associated with an "owner", which can be

14 a person or a entity. Services can be customized to the owner based

15 on stored information that maps owners to devices. Information

16 associated with each of the owners of devices can be stored

17 centrally and used in connection with providing the services at

18 each of the mobile devices. Virtual GPS capabilities can be

19 provided for mobile devices that do not have GPS chips.

20

21 20155328